

## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical  
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Application Serial Number: 10/091, 135A  
Source: 1FW/6  
Date Processed by STIC: 08/30/2006

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IFW16

## RAW SEQUENCE LISTING

DATE: 08/30/2006

PATENT APPLICATION: US/10/091,135A

TIME: 10:20:31

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Output Set: N:\CRF4\08302006\J091135A.raw

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3 <110> APPLICANT: King, Te Piao
4      Spangfort, Michael Dho
6 <120> TITLE OF INVENTION: RECOMBINANT HYBRID ALLERGEN CONSTRUCTS WITH REDUCED
ALLERGENICITY THAT
7      RETAIN IMMUNOGENICITY OF THE NATURAL ALLERGEN
9 <130> FILE REFERENCE: 02313/100H587-US1
11 <140> CURRENT APPLICATION NUMBER: 10/091,135A
12 <141> CURRENT FILING DATE: 2002-03-04
14 <150> PRIOR APPLICATION NUMBER: US 60/272,818
15 <151> PRIOR FILING DATE: 2001-03-02
17 <160> NUMBER OF SEQ ID NOS: 99
19 <170> SOFTWARE: PatentIn version 3.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 8
23 <212> TYPE: PRT
24 <213> ORGANISM: Vesputa vulgaris
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29 1          5
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33 <211> LENGTH: 18
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35 <213> ORGANISM: Vesputa vulgaris
37 <400> SEQUENCE: 2
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89          20          25          30
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96 <210> SEQ ID NO: 6
97 <211> LENGTH: 46
98 <212> TYPE: PRT
99 <213> ORGANISM: Vesputa vulgaris
101 <400> SEQUENCE: 6
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107 Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val
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134 <210> SEQ ID NO: 8
135 <211> LENGTH: 49
136 <212> TYPE: PRT
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139 <400> SEQUENCE: 8
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146          20          25          30
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150          35          40          45
153 Lys
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158 <211> LENGTH: 11
159 <212> TYPE: PRT

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168 <210> SEQ ID NO: 10
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170 <212> TYPE: PRT
171 <213> ORGANISM: Vesputa vulgaris
173 <400> SEQUENCE: 10
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176 1 5 10
179 <210> SEQ ID NO: 11
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181 <212> TYPE: PRT
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184 <400> SEQUENCE: 11
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187 1 5
190 <210> SEQ ID NO: 12
191 <211> LENGTH: 7
192 <212> TYPE: PRT
193 <213> ORGANISM: Vesputa vulgaris
195 <400> SEQUENCE: 12
197 Ile Gln Ile Lys Trp His Lys
198 1 5
201 <210> SEQ ID NO: 13
202 <211> LENGTH: 10
203 <212> TYPE: PRT
204 <213> ORGANISM: Vesputa vulgaris
206 <400> SEQUENCE: 13
208 Phe Lys Asn Glu Glu Leu Tyr Gln Thr Lys
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212 <210> SEQ ID NO: 14
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214 <212> TYPE: DNA
215 <213> ORGANISM: Vesputa vulgaris
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220 agtcttaaac cgaattgcgg taataaggta gtggtatcct atggtctaac gaaacaagag 120
222 aaacaagaca tcttaaagga gcacaatgac tttagacaaa aaattgcacg aggattggag 180
224 actagaggta atcctggacc acagcctcca gcgaagaata tgaaaaattt ggtatggaac 240
226 gacgagttag cttatgtcgc ccaagtgtgg gctaataaat gtcaatatgg tcacgatact 300
228 tgcaggggatg tagcaaaata tcaggttgga caaaacgtag ccttaacagg tagcacggct 360
230 gctaaaatacg atgatccagt taaactagtt aaaatgtggg aagatgaagt gaaagattat 420
232 aatcctaaga aaaagttttc gggaaacgac tttctgaaaa cgggccatta cactcaaattg 480
234 gtttgggcta acaccaagga agttggttgt ggaagtataa aatacattca agagaaattg 540
236 cacaaacatt accttgatat taattatgga cccagcggaa actttaagaa tgaggaaactt 600
238 tatcaaacia agtaa 615
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242 <211> LENGTH: 618
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244 <213> ORGANISM: Polistes annularis
246 <400> SEQUENCE: 15
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249 tcgacaaaac caagcaagaa ttgtgccggt aaagtaatca aatcggttg tccaacggaa      120
251 gaggagaaaa aattaatcgt aagcgagcat aatcggttta gacaaaaagt tgcacagggg      180
253 ttggaaacaa gaggtaatcc tggaccacaa cctgctgcct cggacatgaa tgatttggtgta      240
255 tggaacgatg aattagcaca tatcgcgcaa gtatgggcca gccaatgcca atttctcgta      300
257 cagacaaaat gcaggaatac cgcaaaatat ccagttggac aaaatatagc gtatgcaggt      360
259 gggttctaact taccagatgt agtcagtcta atcaaacttt gggaaaacga agtgaaagat      420
261 ttttaattaca atacaggaat aacaaaacaa aactttgcta aaattggcca ttacactcaa      480
263 atgggtttggg gtaaaactaa agaaattggg tgtggatctc taaaatatat ggaaaataat      540
265 atgcaaaaatc attacctcat atgtaattat ggaccagctg gaaattactt ggggtcaacta      600
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270 <210> SEQ ID NO: 16
271 <211> LENGTH: 204
272 <212> TYPE: PRT
273 <213> ORGANISM: Vesputa vulgaris
275 <400> SEQUENCE: 16
277 Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
278 1 5 10 15
281 Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val
282 20 25 30
285 Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His
286 35 40 45
289 Asn Asp Phe Arg Gln Lys Ile Ala Arg Gly Leu Glu Thr Arg Gly Asn
290 50 55 60
293 Pro Gly Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn
294 65 70 75 80
297 Asp Glu Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr
298 85 90 95
301 Gly His Asp Thr Cys Arg Asp Val Ala Lys Tyr Gln Val Gly Gln Asn
302 100 105 110
305 Val Ala Leu Thr Gly Ser Thr Ala Ala Lys Tyr Asp Asp Pro Val Lys
306 115 120 125
309 Leu Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys
310 130 135 140
313 Lys Phe Ser Gly Asn Asp Phe Leu Lys Thr Gly His Tyr Thr Gln Met
314 145 150 155 160
317 Val Trp Ala Asn Thr Lys Glu Val Gly Cys Gly Ser Ile Lys Tyr Ile
318 165 170 175
321 Gln Glu Lys Trp His Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser
322 180 185 190
325 Gly Asn Phe Lys Asn Glu Glu Leu Tyr Gln Thr Lys
326 195 200
329 <210> SEQ ID NO: 17
330 <211> LENGTH: 205
331 <212> TYPE: PRT

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332 <213> ORGANISM: Polistes annularis
334 <400> SEQUENCE: 17
336 Val Asp Tyr Cys Lys Ile Lys Cys Pro Ser Gly Ile His Thr Val Cys
337 1 5 10 15
340 Gln Tyr Gly Glu Ser Thr Lys Pro Ser Lys Asn Cys Ala Gly Lys Val
341 20 25 30
344 Ile Lys Ser Val Gly Pro Thr Glu Glu Lys Lys Leu Ile Val Ser
345 35 40 45
348 Glu His Asn Arg Phe Arg Gln Lys Val Ala Gln Gly Leu Glu Thr Arg
349 50 55 60
352 Gly Asn Pro Gly Pro Gln Pro Ala Ala Ser Asp Met Asn Asp Leu Val
353 65 70 75 80
356 Trp Asn Asp Glu Leu Ala His Ile Ala Gln Val Trp Ala Ser Gln Cys
357 85 90 95
360 Gln Phe Leu Val His Asp Lys Cys Arg Asn Thr Ala Lys Tyr Pro Val
361 100 105 110
364 Gly Gln Asn Ile Ala Tyr Ala Gly Gly Ser Asn Leu Pro Asp Val Val
365 115 120 125
368 Ser Leu Ile Lys Leu Trp Glu Asn Glu Val Lys Asp Phe Asn Tyr Asn
369 130 135 140
372 Thr Gly Ile Thr Lys Gln Asn Phe Ala Lys Ile Gly His Tyr Thr Gln
373 145 150 155 160
376 Met Val Trp Gly Lys Thr Lys Glu Ile Gly Cys Gly Ser Leu Lys Tyr
377 165 170 175
380 Met Glu Asn Asn Met Gln Asn His Tyr Leu Ile Cys Asn Tyr Gly Pro
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384 Ala Gly Asn Tyr Leu Gly Gln Leu Pro Tyr Thr Lys Lys
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388 <210> SEQ ID NO: 18
389 <211> LENGTH: 24
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398 <211> LENGTH: 54
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402 <400> SEQUENCE: 19
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406 <210> SEQ ID NO: 20
407 <211> LENGTH: 72
408 <212> TYPE: DNA
409 <213> ORGANISM: Vespula vulgaris
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414 agtcttaaac cg 72
417 <210> SEQ ID NO: 21
418 <211> LENGTH: 96

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**VERIFICATION SUMMARY**

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